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T H E

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NOTES ON ABORIGINAL RELICS KNOWN AS “PLUMMETS.”

BY JOHN G. HENDERSON.



At various points in the United States from the Atlantic Ocean to the Pacific, the curious aboriginal relics which form the subject of this paper have been found. In the absence of any other name for them they have been generally designated as “Plummets,” a name suggested by their similarity to the implements of that name, used by civilized man, for the purpose of determining perpendicular and horizontal lines. They are made of copper, stone and iron ore, and are found both upon the surface of the ground and at various depths in the earth, sometimes as many as thirty feet below the surface. They have been found in the mounds of Ohio, at the foot of the “Bluffs” of the Mississippi in apparently undisturbed drift clay, and in the auriferous deposits of Table Mountain, California.

A singular almond-shaped flint implement, found among the other relics of art of the mound builders, for a long time puzzled archæologists, but at length the problem was solved by finding a number of them in an Ohio mound, lying side by side, indicating that by having strips of wood securely fastened on each side, they had once formed part of a sword-like weapon, like what was found in the hands of the natives when Cortez landed in Mexico, and proved so effective, that a man could be cut in two with

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it, or a horse killed at a single blow. It is described as a "two-handed staff, about three feet and a half long, in which at regular distances, were inserted transversely, sharp blades of *itzli* (obsidian)." Some accidental discovery of this kind may sometime indicate to us the use of these strange "plummet" implements, wrought with so much care, and bearing such a striking similarity to each other, whether found in the débris of the mountains of California, the mounds of Ohio, or on the banks of the Mississippi. In the meantime we can only speculate upon the uses made of them, and in this paper I propose to enumerate, describe and figure some of them, show the circumstances under which they were found and offer some conjectures upon their uses.

Fig. 132 represents what may be styled the typical form of these implements. It is made of iron ore, ground down and polished, until it is almost as smooth as glass. It is one of eight found by Henry Root, Esq., of Quincy, Illinois. "They were found two miles north of Quincy, at the foot of the Mississippi Bluff, about two feet from the surface, embedded in solid clay. Two were found in digging one post hole, and six others within a few feet." The one figured * above is in my possession, another one of the same number very much like it, is deposited in the State Geological collection at Springfield, Illinois. Prof. Worthen informs me that the iron ore, out of which they were manufactured, was obtained from Iron Mountain in Missouri.

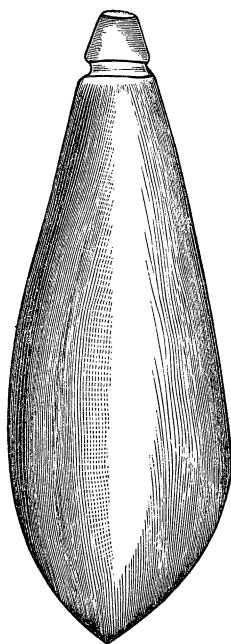
A fragment of one found in Scott County, Illinois, upon the surface of the earth was also made of iron ore. The broken ends are very much worn, as if ground down by hand or by time.

Another one (Fig. 133), having the general shape of figure 132, except that it is much wider in the widest part, was also found on the surface of the earth near the Illinois River in Scott County. The dotted lines are the restoration of the small end, which was broken off. This was found in a field on top of the bluff by Mr. Gardner. Within a mile of where it was picked up is the site of an old Indian village, where pottery, arrow heads, axes, etc., are found. In the burying ground, upon a hill near by, I found traces of funeral ceremonies which were not practised by the Indians of this locality, when discovered by the French in the latter part of the seventeenth century. Upon opening a mound about ten feet in diameter and three feet in height, I found as many as eight

* All the cuts here given are of the exact size of the implements.

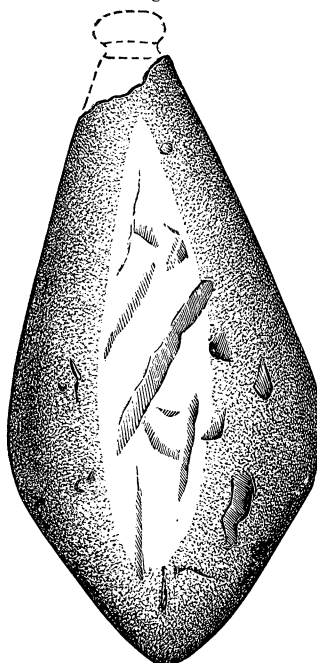
skeletons, all showing distinctly the marks of fire. They were thrown together without any regularity whatever. There were no ashes nor cinders in the mound, which led me to believe that the bodies had been burned near by and the charred remains thrown upon the tomb of the person whose remains were found below them. The bones of this single individual were found at the base of the mound. He (or rather she, for from the skull I judge that it was a female) was buried originally in a sitting

Fig. 132.



Iron Ore (natural size).

Fig. 133.



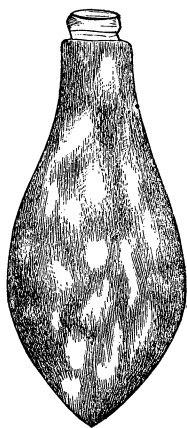
Gray Crinoidal Limestone (nat. size).

posture, but the weight of the superincumbent earth had forced or crowded the vertebræ of the neck into the bifurcation of the lower jaw, and had twisted the head down to one side, so that when found the skull was resting on its side with the face to the east. A skull remarkably flattened by artificial means, or distorted, was found, similar to that of the Peruvian Child, plate No. 10, of Dr. Morton's "*Crania Americana*." We here see evidence of two practices, that of sacrificing the living upon the

grave of the dead, and the distortion of the skull, both of which were common among the Natchez and other tribes upon the lower Mississippi, but neither of which was practised by tribes living upon the banks of the Upper Mississippi, since its discovery. Whether the "plummet" found near their village belonged to them, or to some older population, can only be a matter of conjecture. The implement is made of a whitish limestone containing numerous small joints of Crinoids.

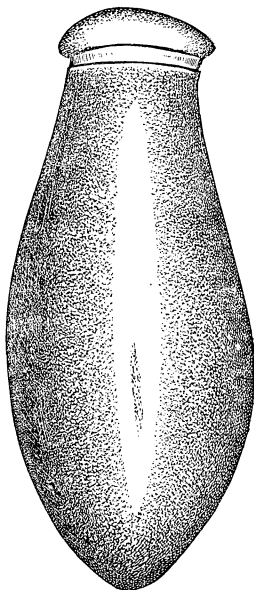
A much smaller implement, but evidently used for the same purpose (Fig. 134), was found *sixteen feet* below the surface of the

Fig. 134.



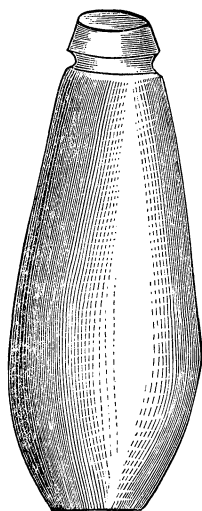
Green-stone (nat. size).

Fig. 135.



Stone (nat. size).

Fig. 136.

Copper and Silver
(nat. size).

earth, in Brown County, Illinois. It is made of green stone. With it were found a small stone scraper and a small disk. The locality where it was found was the bed of a ravine which had been filled up by soil washed from higher ground.

The one represented in figure 135 is copied from Schoolcraft's work, Vol. IV, 175. He describes it as "a fisherman's sinker, of the Penacook tribe, accurately wrought in stone."

In a mound at Marietta, Ohio, "near the feet of a skeleton was found a piece of copper (Fig. 136) weighing three ounces (now in

the Museum of the Antiquarian Society of Worcester). From its shape it appears to have been used as a plumb or for an ornament, as near one of the ends is a circular crease or groove for tying a thread ; it is round, two inches and a half in length, one inch in diameter at the centre, and half an inch at each end. It is composed of small pieces of native copper pounded together ; and in the cracks between the pieces, are stuck several pieces of silver, one nearly the size of a half dime. A piece of ochre or paint, and a piece of iron ore (hematite) which had the appearance of having been partially vitrified (*polished*) were found." "The body of the person here buried was laid upon the surface of the ground, with his face upwards, and his feet pointing to the south-west. From the appearance of several pieces of charcoal and bits of partially burned fossil coal, and the black color of the earth, it would seem that the funeral obsequies had been celebrated by fire ; and while the ashes were yet hot and smoking, a circle of flat stones had been laid around and over the body. * * *

"The mound had every appearance of being as old as any in the neighborhood and was, at the first settlement of Marietta, covered with large trees. It seems to have been made for this single personage, as the remains of one skeleton only were discovered. The bones were much decayed, and many of them crumbled to dust on exposure to the air."*

About ten years ago one of these implements was found, under remarkable circumstances, in Woodbridge County, California. From a paper read by Dr. J. W. Foster before the American Association for the Advancement of Science, at Chicago, 1868, I extract the following description. "The workmen after digging *thirty feet below the surface* struck a plummet composed of *sienite*, ground smooth and formed into a double cone, showing that it was suspended by a string and used to determine perpendicular lines. It affords an example of the lapidary's skill superior to anything furnished by the stone age in either continent." The well was sunk by Jeremiah Wood, on the premises of Mr. McNeely. But if the depth in the earth, at which this specimen was found, is calculated to impress us with the great antiquity of these implements, what shall we say of those found in Table Mountain, in the same state? In a paper read by Professor W. P. Blake, before the same meeting of the Association held at Chicago, 1868, we

* Aboriginal Monuments of New York, by E. G. Squier.

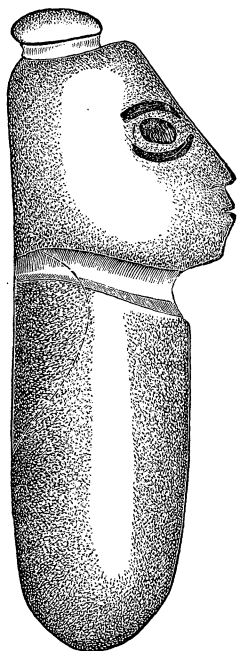
find the following description of the mountain and the relics of art found in it, among which were "some instruments resembling plummets." Where the mountain now stands was a valley traversed by a river. Here ages since, there commenced a deposit with gold, pebbles, mud and sand. Volcanic action encrusted these with ashes, and at last all was covered by the lava. As the valley filled up, the water of the river cut on each side of the accumulating mass a channel commencing at the base of the deposit of lava. In time it washed its way until the Table Mountain stands erect and two valleys are formed, one on either side of it. This mountain extends with its flat summit for miles, its surface edge being a bold bluff of black appearing rock, with little or no vegetation upon its plane. The thickness of the entire deposit averages from one to two hundred feet, the height of the lava above the newly formed valleys being from one thousand to fifteen hundred feet. The miner seeking the auriferous deposit, having, by sinking a shaft, ascertained the greatest depth of the whole deposit, tunnels from the side of the valley, and this process has brought to light teeth of extinct mammalia as well as relics of human art. Among these were two stone objects which were supposed to be shovels used in cooking, by placing them upon or into the burning fuel; a mortar or dish, *some instruments resembling plummets*, and several spear heads."*

In all the specimens thus far described, no effort whatever was made by the artist to modify the form of the implement for the sake of either ornament or novelty, except the Marietta specimen, which had silver worked in the crevices. Whether of stone, copper or iron ore, it consists simply of a double cone, with the bulge nearer the base than top, and a very slight groove around the small end, for the purpose of tying the string by which it was suspended. Not even a line or mark is found upon their smooth polished surfaces, but the following relic (Figs. 137 and 138) is an exception to the above rule. The profile is neatly cut as if the artist had worked with a sharp cutting instrument. The vertical occiput, retreating forehead and massive jaws, give to it a strong Indian look, which is increased when viewed in front, and shows that the aboriginal artist was attempting to carve in stone a portrait, or at least, that he had succeeded in presenting the characteristic features of the Red Indian. The streaks of black paint

*AMERICAN NATURALIST, vol. II, p. 388.

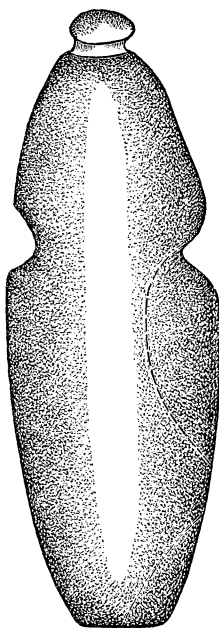
above and below the eyes, the black eye-balls and scalp-lock, give to it a hideous look which, perhaps, caused it to be looked upon with reverential awe by its superstitious aboriginal owner, or the modern Indian who perhaps found it, a relic of some older race, and finished it to his own liking by the addition of the black paint. A glance at fig. 138, which is a back view of fig. 137, shows that the primitive artist preserved as far as the nature of his design would admit, the general plummet form shown in the other implements

Fig. 137.



Dark Limestone (nat. size).

Fig. 138.



Back view of Fig. 137.

figured, while the slight groove around the small end shows plainly that it was to be suspended by a string, and I think fully warrants the conclusion that this implement is but a modification of the plummet, and that they were all used for the same purpose. It was found on the surface near the Illinois river, in Scott County and is now in my possession. Upon the left side a small piece represented by the dotted lines, is broken out and lost. When this is restored as seen in figure 138, the regular oval form of the plummet implements is plainly seen, when viewed from behind.

I can imagine six different uses which *might* have been made of these implements.

1st. They might have been used as sling shots, a string being attached to the weapon and to the wrist, while the implement itself was grasped in the hand. While it would make a very formidable weapon by the addition of weight to the fist, or by holding to the string and striking with it, after the manner of civilized roughs, a war-club would be much more formidable, and would be preferred where there was no motive for concealment; besides, it requires a considerable degree of civilization to invent and fully appreciate the virtues of a sling shot! The Brown County implement (Fig. 134) is evidently too small for anything of this kind, unless, like the little flint arrow points, it was used by the small boys.*

2d. They might have been used as sinkers for fishing tackle. Schoolcraft seems to think that the Penacock implement (Fig. 135) was used by that tribe for this purpose. If this is correct, it does not prove that they were originally intended for that purpose. I myself, by casting, made of lead an exact counterpart of fig. 132, and used it for a sinker for a trout line, and it answered the purpose admirably. I did not try the original implement, because of the danger of losing it, the smallness of the groove rendering it impossible for the fingers of a white man to attach it so firmly to the line as to remove the apprehension of its loss. The amount of labor bestowed on the Marietta, Quincy and Woodbridge specimens, and the inability to fasten them securely to a line, on account of the smallness of the groove, would lead us to believe that they were not used for this purpose.

3d. They might have been used in playing some game, but this is only a possibility. We have no account of any game played by either savage or civilized men (so far as I know) in which any instrument of this kind is, or could be, used.

4th. They might have been used as a sacred implement in the

*Since writing the above I have met with the following description of a sling-stone. "The Indians that inhabit still farther to the westward, a country which extends to the South Sea, use in fight a war-like instrument that is very uncommon. Having great plenty of horses, they always attack their enemies on horseback, and encumber themselves with no other weapon than a stone of middling size, curiously wrought, which they fasten by a string, about a yard and a half long, to their right arms, a little above the elbow. These stones they conveniently carry in their hands till they reach their enemies, and then swinging them with great dexterity, as they ride full speed, never fail of doing execution."—*Carvers' Travels in North America*. 1776, p. 188.

performance of some religious ceremony. This, like the preceding supposition, is only a possibility, there being no evidence whatever from which we are warranted in deriving such an inference.

5th. They might have been worn as a personal ornament. If they were used for this purpose, it would seem to me that implements worked out of iron ore, with the amount of labor which was bestowed on the Quincy specimens, would be ornamented with lines or figures. Their very plainness would seem to indicate the practical use for which they were intended. Besides, the weight of those made of iron ore would, at least, in the estimation of a white man, render them inconvenient personal ornaments.

6th. They might have been, and probably were, used for plummets. Their shape and the groove at the small end suggest at once, to the eye of a civilized man, that they were used in the first instance for obtaining a perpendicular line, and then as a level by drawing a horizontal line, at right angles with the first. This would easily be accomplished by the use of a wooden or other square. It has been suggested, that from the nature of the aboriginal ruins throughout the United States, the primitive people who made these implements would have had no use for plummets but it seems to me that the fact that this implement can also be used as a level, has escaped attention. Indeed the plummet, suspended to an upright fastened to a horizontal bar, is used among us as a level. That the mound builders had the ability to make the square above suggested, we know from the mathematical accuracy of squares and circular enclosures of earth found everywhere in the Mississippi Valley. Whatever might have been their use, their great antiquity will not be questioned. The Brown County, Woodbridge and Table Mountain specimens indicate that they rank among the very oldest relics of man found upon this continent, while from that found in the mound at Marietta, we see that they were at least not unknown to the mound builders, and, if Schoolcraft is right, the Penacook specimen shows it to have been used by the modern Indian.

[EDITORIAL NOTE.—These “plummets,” or “sinkers,” as they are more commonly called in New England, are of quite common occurrence in the vicinity of Salem, and we have in the collection of the Academy quite a number of specimens varying in size from an ounce or two to several pounds in weight, but all made on the general pear-shaped pattern, though they exhibit about as many modifications within the shape as shown by the hundreds of varieties of the pear itself. Local archæologists here in general consider them as “sinkers,” principally from their shape and from the fact that they are more often found along the seashore than in the interior, though not unfre-

quently met with at a distance from the coast. The very large size of some of the specimens would perhaps indicate some different use from any proposed by Mr. Henderson, and in fact some of them run so decidedly into the group of implements classed as "pestles" that it is almost impossible to draw the line between the two groups, which are well marked by their extremes. The peculiar shape of these instruments has also caused them to be regarded as weights, used to stretch the thread in spinning. This supposition is rendered very probable by the fact that stone weights have been used in spinning, and from the statement (made to me in conversation by Dr. Palmer of Washington, I think) that similar stones are still in use among the Indians of the Northwest. As it is generally accepted that the Mound Builders were informed in regard to the spinning of fibre of some kind, and certainly of the *twisting* of materials which they could manufacture by some process akin to weaving, the use of these implements as weights seems very probable, and as household implements they would often be more or less elaborately finished or carved. For my own part I have for some time considered them as representing, to a greater or less extent, according to size, material, shape and finish, 1st, Pestles, 2d, Sinkers, 3d, Spinning weights, 4th, Ornaments. That their principal use was as "plummets" may be perhaps questioned, as there are far too many of them found, and of too great a variation in size, to lead us to infer that they were used mainly for that purpose. Though if it was necessary, in ancient architecture, to establish a perpendicular line, the implements were at hand as "weights" with lines attached. — F. W. PUTNAM.]

CONTRIBUTIONS TO THE NATURAL HISTORY OF THE VALLEY OF QUITO.—No. III.

BY PROF. JAMES ORTON.

ARTICULATES.

OF crustaceans, the only representative, we believe, is a small cray-fish abounding in the filthy, stagnant waters about Quito ; its name is undetermined.

In regard to the character of the insect fauna of the Valley, we quote from a letter addressed by Andrew Murray, Esq., to Dr. Packard. "It is thoroughly Columbian. It would be natural to expect that northern types should run down the Andean chains, at high elevations like Quito ; but I have not found the effect to be so much the presence of such types more there than in the rest of the Columbian district (in which they are very largely introduced as I think), as the absence of tropical looking species, which occur lower down in Venezuela, Cayenne, etc. Not that there are not large and gorgeous species, but that the mass seems minute in size and of little brilliancy, but still such genera and forms as are also met with in Columbia itself."